REMARKS

Claims 48-86 and 88-89 are currently pending in this application. Claims 1-47 were previously canceled and claims 64-67 and 79-85 were withdrawn. Claims 48, 59, 86 and 88 have been amended.

The Examiner objected to claims 48, 59, and 88 for various formalities. Applicants have amended claims 48, 59, and 88 to correct the errors as suggested by the Examiner. In light of the foregoing, Applicants respectfully request the withdrawal of the claim objections.

The Examiner rejected claims 48-59, 68-70 and 86-89 under 35 U.S.C. §102(e) as being anticipated by Zhang (U.S. Publication No. 2004/0088456).

Zhang discloses a smart hard-disk drive (sHDD), data (e.g. image files) may be directly downloaded to the sHHD, or (e.g. music files) uploaded from the sHHD (see paragraph 0019). The sHHD preferably can support at least USB host function (see paragraph 0020). The sHHD provides a universal multimedia exchange platform; and can be used to store all multimedia data needed by various types of multimedia devices, e.g. digital voice, digital photos, digital videos, music and movie (see paragraph 0024).

Zhang also discloses a movie-playing apparatus 138 (paragraph 0090, Fig. 13). It comprises an USB port 138u which receives data from the HDD. USB controller 138uc converts data 138usb into MPEG data 137mpg; MPEG decoder 138md converts the MPEG data 137mpg into digital A/V signals 137dav; the A/V D/A converter & driver 138da converts these digital signals into analog signals 137aav.

Zhang also discloses an HDD-based camcorder (see paragraph 0088, Fig. 12). The HDD 8 interfaces with the camcorder with an USB (or IEEE 1394, other interface protocols) connector 7m. The HDD-based camcorder comprises an image sensor 128is, an MPEG encoder 128me, an USB controller 128uc and a microprocessor 128up. The MPEG encoder 128me converts the raw video data 127raw to MPEG- format 127mpg before sending it to the HDD in the USB format 127usb.

From the above contents, it can be seen that in Zhang, multimedia data including video (MPEG) or music data/files are transmitted in the USB format and then are converted into MPEG format or other formats for playing.

The MPEG format indicated in Zhang is the Video and Audio multimedia codec file format (not a real time data format) for storage in HDD and transmission through an asynchronous interface as USB, a serial asynchronous interface. Normally a file in any format (including MPEG) does not need real time transmission interface for moving from one device to another. It can be transmitted by an asynchronous interface or a synchronous interface. While

TS (Transport stream) format is a real time parallel data format that requires a synchronous interface for transmission. However, USB is a serial asynchronous interface which can not transmit a real time data normally. The present invention solves this problem by converting a parallel synchronous data into a serial asynchronous data format and enabling a normal USB interface to transmit a TS format real time data.

The present invention utilizes USB packets or USB transceiving unit to transport parallel synchronous data streams. As well known in the art, USB interface generally is used for transporting serial asynchronous data or packets, but is not suitable for transporting parallel synchronous data streams (see paragraph 0009 of the specification of the present application US 2008/0010663A1).

The present invention provides a standard interface for transmitting data streams between a digital signal processing host device and an external service module, so that the external service module can be separated from the digital signal processing host device. Further, the interface of the present invention can transport parallel synchronous data streams as well as USB (serial asynchronous) data or packets, thus has good extensibility and a broader application range, and has also simple structure and lower cost.

Therefore, Zhang fails to disclose or suggest the detecting unit and the conversion unit of the amended claim 48, and cannot achieve the above technical effects. Thus the new claim 48 is not anticipated by Zhang.

Claims 59 and 86 are amended to include the features which are the same as claim 48 or correspond to features of claim 48. So, at least for the above stated reasons, all dependent claims 49-59, 68-70, 86-89 are new and not obvious in view of Zhang.

We also believe that Zhang (page 7 paragraph 0088) does not disclose the P/S conversion unit of claim 53. Although Zhang discloses sending MPEG-format data in the USB format, but Zhang fails to disclose transporting parallel synchronous data streams in the USB format. In Zhang, the MPEG-format data to be transmitted through USB interface must be serial asynchronous data or packets, NOT be parallel synchronous data streams. This is well known in the art. The serial asynchronous data or parallel synchronous data streams indicate manners for transporting the data, do not indicate the specification which the data accords with; the MPEG-format data may be transported in the serial asynchronous manner (e.g. USB format) or parallel synchronous manner (data stream format).

In light of the foregoing, Zhang does not teach or suggest each and every limitation of claims 48, 59, and 86. As such, claims 48, 59, and 86 are allowable over Zhang. Claims 49-58,

60-85 and 88-89 depend from claims 48, 59, and 86 respectively and are also allowable over Zhang for these and other reasons.

The Examiner rejected claims 60-63 under 35 U.S.C. §103(a) as being unpatentable over Zhang in view of Robertson (U.S. Publication No. 2001/0047441).

Claims 60 and 63 depend from claim 59 and add additional limitations. As discussed, Zhang does not teach or suggest each and every limitation of claim 59, much less those of claims 60 and 63.

Robertson does not cure the deficiencies of Zhang. Robertson is cited for a teaching relating to an RF processing unit configured to transmit the control commands. However, Robertson does not teach or suggest, nor does the Examiner allege that Robertson teaches or suggests anything regarding a detecting unit, an interface protocol identification unit, or a method for transmission between the digital signal processing host device and the external service module as recited in the independent claims.

In light of the foregoing, Zhang and Robertson, alone or in combination do not teach or suggest each and every limitation of claim 58. As such, claim 58 is allowable over Zhang and Robertson. Claims 60 and 63 depend from claim 58 and are also allowable over Zhang and Robertson for these and other reasons.

The Examiner rejected claims 71-76 under 35 U.S.C. §103(a) as being unpatentable over Zhang in view of Eskicioglu (U.S. Patent No. 7,254,236).

Claims 71-76 depend from claim 59 and add additional limitations. As discussed, Zhang does not teach or suggest each and every limitation of claim 59, much less those of claims 71-76.

Eskicioglu does not cure the deficiencies of Zhang. Eskicioglu is cited for a teaching relating to an acquisition unit. However, Eskicioglu does not teach or suggest, nor does the Examiner allege that Eskicioglu teaches or suggests anything regarding a detecting unit, an interface protocol identification unit, or method for transmission between the digital signal processing host device and the external service module as recited in the independent claims.

In light of the foregoing, Zhang and Eskicioglu, alone or in combination do not teach or suggest each and every limitation of claim 58. As such, claim 58 is allowable over Zhang and Eskicioglu. Claims 71-76 depend from claim 58 and are also allowable over Zhang and Eskicioglu for these and other reasons.

The Examiner rejected claims 77-78 under 35 U.S.C. §103(a) as being unpatentable over Zhang in view of Eskicioglu and Robertson.

Claims 77 and 78 ultimately depend from claim 59 and add additional limitations. As discussed, Zhang does not teach or suggest each and every limitation of claim 59, much less those of claims 77 and 78.

Robertson does not cure the deficiencies of Zhang. Robertson is cited for a teaching relating to an RF processing unit configured to transmit the control commands. However, Robertson does not teach or suggest, nor does the Examiner allege that Robertson teaches or suggests anything regarding a detecting unit, an interface protocol identification unit, or a method for transmission between the digital signal processing host device and the external service module as recited in the independent claims.

Eskicioglu does not cure the deficiencies of Zhang and Robertson. Eskicioglu is cited for a teaching relating to an acquisition unit. However, Eskicioglu does not teach or suggest, nor does the Examiner allege that Eskicioglu teaches or suggests anything regarding a detecting unit, an interface protocol identification unit, or method for transmission between the digital signal processing host device and the external service module as recited in the independent claims.

In light of the foregoing, Zhang, Robertson and Eskicioglu, alone or in combination do not teach or suggest each and every limitation of claim 58. As such, claim 58 is allowable over Zhang, Robertson and Eskicioglu. Claims 77 and 78 depend from claim 58 and are also allowable over Zhang, Robertson and Eskicioglu for these and other reasons.

CONCLUSION

In light of the foregoing, Applicants respectfully submit that the application is in a condition for allowance.

Applicants' undersigned attorney is available to discuss the application in a telephone conference during normal business hours if the Examiner believes it would expedite the prosecution of the application.

Respectfully submitted,

Thomas J. Otterlee
Reg. No. 48,652

Docket No.: 016687-9006-00
Michael Best & Friedrich LLP
100 East Wisconsin Avenue, Suite 3300
Milwaukee, Wisconsin 53202-4108
262.956.6560

-14-